

COMPRESSED EVENT COUNTING TECHNIQUE AND APPLICATION TO A FLASH MEMORY SYSTEM

ABSTRACT OF THE DISCLOSURE

A non-volatile flash memory system counts the occurrences of an event, such as the number of times that individual blocks have been erased and rewritten, by updating a compressed count only once for the occurrence of a large number of such events. Complementary embodiments include updating the compressed count based upon a random number or upon the actual count matching a multiple of the fixed number. These techniques also have application to monitoring other types of recurring events in flash memory systems or in other types of electronic systems. In another aspect of the present invention, provisions are made to maintain an accurate experience count if the memory system experiences an improper shutdown, for example in case of power loss or removal of a memory card.